7 May 2021

The All-Party Parliamentary Group on Energy Costs

Mr Alan Brown MP

c/o Philip Royal, Royal Public Affairs

House of Commons,

London SW1A 0AA

By email only to: phil.royal@btinternet.com

Dear Mr Brown MP,

Thank you once again for the opportunity to speak to the APPG on Energy Costs during your April session *"Net-zero, how will we pay for it?"*. I am writing to follow up with answers to the questions raised by Tobias Schreiner during the session.

Question 1: Do you have any estimations on how much demand side response (DSR) as measures of balancing services could reduce current expenditures for balancing services which are projected to stand at £1bn?

Generally, DSR parties arbitrage between different markets and studies tend to focus on the wider cost savings rather than concentrating specifically on balancing cost savings. The most targeted GB study of which we are aware is a Charles River Associates report, entitled *"Assessment of the economic value of demand-side*

participation in the Balancing Mechanism"[1], which takes the wider view of cost savings and is not very recent (2017), but is at least focused on DSR participation in balancing.

The report estimates *"…an indicative range of £110 - £400 million of economic benefits in 2020, rising to £160 - £440 million in 2030 following from a removal of barriers that limit efficient competition from DSR in the BM. This range may be explained by a number of factors but principally reflects the mix of generation and capacity margins under different scenarios. After allowing for further uncertainty in relation to the capital cost of new peaking capacity, this range widens to £100 - £530 million in 2020, rising to £140 - £580 million by 2030."*

This analysis was a precursor to the introduction of the Virtual Lead Party role by Ofgem in 2019, which gives DSR aggregators access to the GB balancing mechanism (but not the wholesale market), without having to become a licensed electricity supplier. The report concludes that *"[t]he size of potential economic benefits indicates the importance of providing DSR access to revenue sources, including the BM, to support its efficient provision".*

Similarly, the Association for Decentralised Energy (ADE) has figures for wider cost savings related to DSR peak shaving:

"National Grid has set an aspiration to meet 30–50% of balancing capability from demand response by 2020. The ADE calculates that 16% of the UK's peak electricity requirement – or 9.8 gigawatts (GW) – could be provided by businesses being flexible in their energy demand, which could save UK energy consumers £600 million by 2020 and £2.3bn by 2035."[2]

Again, looking at the bigger picture, Carbon Tracker's "Foot off the Gas" report[3] highlights cost savings that could be realized through combining DSR, storage and energy efficiency and renewables investment as part of a Clean Energy Portfolio

[1] https://www.ofgem.gov.uk/ofgem-publications/119416

[2] https://www.theade.co.uk/resources/what-is-demand-side-response

[3] https://carbontracker.org/reports/foot-off-the-gas/

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(CEP), to avoid investing in new Combined Cycle Gas Turbine (CCGT):

"We find that a CEP is already cheaper than building new CCGTs whilst offering the same level of grid services. Figure 1 shows that a CEP outcompetes new CCGTs already now when comparing the Levelised Cost of Energy (LCOE) for both. By 2030, the LCOE of a CEP is expected to drop to £41/MWh ($57/MWh), 39% cheaper than proposed CCGTs at £67/MWh ($93/MWh). That percentage widens to 60% by 2050. Our findings highlight a relevant investment signal: by investing in new CCGTs, investors are exposing themselves to stranded asset risk of £9 billion ($13 billion)."

Question 2: You mentioned the necessity for price signals on a local level. Do you have proposals / briefings on local pricing schemes at RAP?

RAP has not published any UK specific reports on local pricing, but we have been involved in several projects examining the benefits of local pricing and the necessary safeguards, in the US, EU and other regions. We would be happy to set up a call with Mr Schreiner and any APPG members on this topic, if you have specific questions.

For a European perspective, the 2011 paper *"Congestion Management in European Power Networks: The Case for Flow-Based Allocation and Locational Marginal Pricing"*[4] by the Climate Policy Initiative/DIW Berlin and the Electricity Policy Research Group, University of Cambridge, considers the merits of applying US locational marginal pricing models to EU markets. The paper *"International Experiences of Nodal Pricing Implementation"*[5] by the same lead author, provides useful FAQs, based on the US experience.

Closer to home, Policy Exchange's 2020 recent "Powering Net Zero"[6] paper sets out a compelling case for local pricing in GB, while Energy Systems Catapult's March 2021

[4] https://www.climatepolicyinitiative.org/wp-content/uploads/2011/12/Congestion-Management-Paper.pdf

[5] https://climatepolicyinitiative.org/wp-content/uploads/2011/12/Nodal-Pricing-Implementation-QA-Paper.pdf

[6] https://policyexchange.org.uk/publication/powering-net-zero/

"EMR 2.0"[7] report envisions a deregulated electricity market, focused on clear price signals and innovative products and services.

Please do not hesitate to contact me if I can be of any further assistance. As mentioned above, my RAP colleagues and I would be very happy to discuss any of the issues raised in this letter, or any other matters related to the clean energy transition.

Yours sincerely,

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[7] https://es.catapult.org.uk/reports/rethinking-electricity-markets-the-case-for-emr-2/

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